

## STATE OF TENNESSEE DEPARTMENT OF HEALTH **ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

**Greg Denton** 

TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Nashville, TN 37243-1534

Michael Atchley TDEC-WPC

Knoxville FO

3711 Middlebrook Pike

Knoxville, TN 37921

Lab ID: K00002366

**Knoxville Regional Laboratory** 

Sampling Agency: TDEC: Division of Water Pollution Control

**Billing Code:** 

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

K00002366001

**Project Name:** 

TVA-Ash Spill

Sample Description:

**Project Site No.:** 

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

Station No.:

**EMORY012.1RO** 

Date/Time Collected:

05/12/2009 09:52

Sampler's Name: County:

Geoff Klein ROANE - 73

Sample Matrix:

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

**Billing Code:** Send Report To: 327.34-20

Agency Invoiced:

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009 14:37

Received By:

E McCrary

**Field Determinations** 

pH:

Chlorine, residual:

49

8.17

pH Units

Conductivity: Temperature:

16.85

**uMHO** mg/L

**Dissolved Oxygen: 9.88** 

Other:

Flow:

**CFS** 

TEST: Alkalinity, Total METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	14	mg/L	3.8	10	M Chen	5/19/2009

TEST: Hardness, Calcium	ME	THOD: SM 350	0-Ca D			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	18	mg/L	0.7	1	P Leathers	5/19/2009

TEST: Residue, Settleable	ME.	THOD: SM 254					
ANALYTE	RESULT	UNITS	MDL MQL		ANALYZED BY:	DATE	
Settleable Residue	U	mi/L	0.10	0.10	P Leathers	5/13/2009	

TEST: Residue, Suspended	ME.	THOD: SM 254				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	5/15/2009

J - Estimated value between MDL and MQL

**MDL - Method Detection Limit** 

**MQL - Method Quantitation Limit** 

K00002366002

**Project Name:** 

TVA-Ash Spill

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

**Station No.:** 

EMORY002.1RO

**Date/Time Collected:** Sampler's Name:

05/12/2009 10:50

County:

Geoff Klein

Sample Matrix:

**ROANE - 73** 

EFO:

Water

**Sampling Agency:** 

Knoxville

**Billing Code:** 

TDEC-WPC

**Send Report To:** 

327.34-20

**Agency Invoiced:** 

TDEC-WPC TDEC-WPC

**Priority Date:** 

**Date/Time Received:** 

05/12/2009 14:37

Received By:

E McCrary

**Field Determinations** 

pH: 7.41

Chlorine, residual:

Conductivity:

52

**uMHO** 

pH Units

Temperature: 17.60

**Dissolved Oxygen: 9.45** 

mg/L

Other:

Flow:

**CFS** 

TEST: Alkalinity, Total	ME <sup>-</sup>	THOD: EPA 31	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	16	mg/L	3.8	10	M Chen	5/19/2009

TEST: Hardness, Calcium	ss, Calcium METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	16	mg/L	0.7	1	P Leathers	5/19/2009

TEST: Residue, Settleable	MET	ГНОD: SM 254				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	5/13/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	5/15/2009

J - Estimated value between MDL and MQL

**MDL - Method Detection Limit** 

**MQL - Method Quantitation Limit** 

K00002366003

**Project Name:** 

TVA-Ash Spill

Sample Description:

Field Blank-Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

**Date/Time Collected:** 

2FB

Station No.:

**Project Site No.:** 

EMORY002.1RO 10:50

Sampler's Name:

05/12/2009 Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency: **Billing Code:** 

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To:

Date/Time Received:

05/12/2009 14:37

Received By:

E McCrary

Agency Invoiced:	TDEC-WPC
Priority Date:	

**Field Determinations** 

Chlorine, residual:

**Dissolved Oxygen:** 

**CFS** 

**Conductivity:** 

Temperature:

pH:

Other:

Flow:

TEST: Alkalinity, Total	ME*					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	U	mg/L	3.8	10	M Chen	5/19/2009

TEST: Hardness, Calcium	ME.	THOD: SM 350	0-Ca D			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	U	mg/L	0.7	1	P Leathers	5/19/2009

TEST: Residue, Suspended	ME:	THOD: SM 254	0D	-		
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	5/15/2009

J - Estimated value between MDL and MQL

**MDL - Method Detection Limit** 

**MQL - Method Quantitation Limit** 

K00002366004

**Project Name:** 

TVA-Ash Spill

Sample Description:

Emory River mile 2.1-Duplicate

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

2FD

Station No.:

**Date/Time Collected:** 

EMORY002.1RO

Sampler's Name:

05/12/2009 10:50

County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

**Billing Code:** 

TDEC-WPC

327.34-20

Send Report To: Agency Invoiced: TDEC-WPC **TDEC-WPC** 

**Priority Date:** 

Date/Time Received:

05/12/2009 14:37

Received By:

E McCrary

**Field Determinations** 

pH:

7.41

pH Units

Chlorine, residual:

Conductivity:

52

**uMHO** 

Temperature: Dissolved Oxygen: 9.45

17.60

mg/L

Other:

Flow:

**CFS** 

TEST: Alkalinity, Total	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	16	mg/L	3.8	10	M Chen	5/19/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	17	mg/L	0.7	1	P Leathers	5/19/2009

TEST: Residue, Settleable	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	5/13/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	5/15/2009

J - Estimated value between MDL and MQL

**MDL - Method Detection Limit** 

**MQL - Method Quantitation Limit** 

K00002366005

**Project Name:** 

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

2B

**Station No.:** 

EMORY001.9RO

Date/Time Collected:

05/12/2009 11:03

Sampler's Name:

Geoff Klein

County:

ROANE - 73

**Sample Matrix:** EFO:

Water

Knoxville

Sampling Agency:

TDEC-WPC

**Billing Code:** Send Report To: 327.34-20

Agency Invoiced:

**TDEC-WPC** TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009 14:37

Received By:

E McCrary

**Field Determinations** 

7.15 pH:

pH Units

Chlorine, residual:

Conductivity:

50 17.15 uMHO

mg/L

Temperature:

**Dissolved Oxygen: 9.52** 

Other:

Flow:

**CFS** 

TEST: Alkalinity, Total	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	16	mg/L	3.8	10	M Chen	5/19/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	18	mg/L	0.7	1	P Leathers	5/19/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	5/13/2009

TEST: Residue, Suspended	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	5/15/2009

J - Estimated value between MDL and MQL

**MDL - Method Detection Limit MQL - Method Quantitation Limit** 

K00002366006

**Project Name:** 

TVA-Ash Spill

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

TIVA Ash Coll

**Project Site No.:** 

3

**Station No.:** 

EMORY001.7RO

Date/Time Collected: Sampler's Name:

05/12/2009 11:15

Samplers

Geoff Klein

County: Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

Billing Code: Send Report To: 327.34-20 TDEC-WPC

Send Report 10: Agency Invoiced:

TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009 14:37

Received By:

E McCrary

**Field Determinations** 

**pH:** 7.28

Chlorine, residual:

Conductivity:

52

Temperature: 17.11

Dissolved Oxygen: 9.39

Other:

Flow:

CFS

pH Units

**uMHO** 

mg/L

TEST: Alkalinity, Total	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	16	mg/L	3.8	10	M Chen	5/19/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	37	mg/L	0.7	1	P Leathers	5/19/2009

TEST: Residue, Settleable	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	5/13/2009

TEST: Residue, Suspended	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	U	mg/L	10	10	A Peeples	5/15/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

**MQL - Method Quantitation Limit** 

K00002366007

**Project Name:** 

TVA-Ash Spill

Sample Description:

Emory River mile 0.1

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

**Station No.:** 

EMORY000.1RO

**Date/Time Collected:** 

05/12/2009 11:23

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Knoxville

Sampling Agency: **Billing Code:** 

TDEC-WPC

327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009

14:37

Received By:

E McCrary

TEST: Alkalinity, Total	ME'			*		
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	44	mg/L	3.8	10	M Chen	5/19/2009

**Field Determinations** 

**Dissolved Oxygen: 9.23** 

Chlorine, residual:

Conductivity:

Temperature:

7.13

17.60

51

pH Units

**uMHO** 

mg/L

**CFS** 

pH:

Other:

Flow:

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	39	mg/L	0.7	1	P Leathers	5/19/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	0.1	ml/L	0.10	0.10	P Leathers	5/13/2009

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	21	mg/L	10	10	A Peeples	5/15/2009

J - Estimated value between MDL and MQL

**MDL - Method Detection Limit** 

MQL - Method Quantitation Limit

K00002366008

**Project Name:** 

TVA-Ash Spill

Sample Description:

Sampler Project Name: TVA Ash Spill

Clinch River mile 2.3

Project Site No.:

5

Station No.:

CLINC002.3RO

Date/Time Collected:

05/12/2009 11:34

Sampler's Name:

Geoff Klein

County:

**ROANE - 73** 

Sample Matrix:

Water

EFO:

Sampling Agency:

Knoxville TDEC-WPC

Billing Code:

327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009

14:37

Received By:

E McCrary

**Field Determinations** 

pH:

7.70

pH Units

Chlorine, residual:

Conductivity:

200

uMHO

Temperature: 17.20 Dissolved Oxygen: 9.76

mg/L

Other:

Flow:

**CFS** 

TEST: Alkalinity, Total METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	100	mg/L	3.8	10	M Chen	5/19/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	82	mg/L	0.7	1	P Leathers	5/19/2009

TEST: Residue, Settleable	METHOD: SM 2540F					· · · · · · · · · · · · · · · · · · ·	
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	5/13/2009	

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	20	mg/L	10	10	A Peeples	5/15/2009

J - Estimated value between MDL and MQL

**MDL - Method Detection Limit** 

MQL - Method Quantitation Limit

K00002366009

**Project Name:** 

TVA-Ash Spill

Sample Description:

Clinch River TVA Discharge Point

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

5A

**Station No.:** 

KingAshOutF2

**Date/Time Collected:** 

05/12/2009 11:42

Sampler's Name:

Geoff Klein

County: Sample Matrix: ROANE - 73

Water

EFO:

Knoxville

Sampling Agency: **Billing Code:** 

TDEC-WPC

327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009

14:37

Received By:

E McCrary

**Field Determinations** 

pH:

7.43

pH Units

Chlorine, residual:

Conductivity:

62

**uMHO** 

Temperature: 19.18

**Dissolved Oxygen: 9.04** 

mg/L

Other:

Flow:

**CFS** 

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	20	mg/L	3.8	10	M Chen	5/19/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	20	mg/L	0.7	1	P Leathers	5/19/2009

TEST: Residue, Settleable	METHOD: SM 2540F					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Settleable Residue	U	ml/L	0.10	0.10	P Leathers	5/13/2009

TEST: Residue, Suspended	ME.					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	21	mg/L	10	10	A Peeples	5/15/2009

J - Estimated value between MDL and MQL

**MDL - Method Detection Limit** 

**MQL - Method Quantitation Limit** 

K00002366010

**Project Name:** 

TVA-Ash Spill

pH:

**Field Determinations** 7.86

pH Units

Sample Description:

Clinch River mile 4.5 near Sugar Grove Valley F Chlorine, residual:

Sampler Project Name: TVA Ash Spill

Conductivity:

244 **uMHO** 

**Project Site No.:** 

Station No.:

11:53

Temperature:

15.78

**Date/Time Collected:** 

CLINC004.5RO

Dissolved Oxygen: 10.19

mg/L

Sampler's Name:

05/12/2009 Geoff Klein

Other: Flow:

**CFS** 

County:

**ROANE - 73** 

Water

Sample Matrix: EFO:

Knoxville

Sampling Agency:

TDEC-WPC 327.34-20

**Billing Code:** Send Report To:

TDEC-WPC TDEC-WPC

**Agency Invoiced: Priority Date:** 

Date/Time Received:

05/12/2009

14:37

Received By:

E McCrary

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	110	mg/L	3.8	10	M Chen	5/19/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	90	mg/L	0.7	1	P Leathers	5/19/2009

TEST: Residue, Settleable	METHOD: SM 2540F						
ANALYTE	RESULT	RESULT UNITS MDL		MQL	ANALYZED BY:	DATE	
Settleable Residue	0.1	ml/L	0.10	0.10	P Leathers	5/13/2009	

TEST: Residue, Suspended	METHOD: SM 2540D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Suspended Solids	36	mg/L	10	10	A Peeples	5/15/2009

J - Estimated value between MDL and MQL

**MDL - Method Detection Limit MQL - Method Quantitation Limit** 



## STATE OF TENNESSEE DEPARTMENT OF HEALTH **ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

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TDEC-WPC

6th Floor, L & C Tower Annex

401 Church Street

Nashville, TN 37243-1534

Michael Atchley TDEC-WPC

Knoxville FO

3711 Middlebrook Pike Knoxville, TN 37921

K00002366 Lab ID:

Knoxville Regional Laboratory

Sampling Agency: TDEC: Division of Water Pollution Control

**Billing Code:** 

327.34-20

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

K00002366001

**Project Name:** 

TVA-Ash Spill

Sample Description:

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

Station No.:

EMORY012.1RO

**Date/Time Collected:** Sampler's Name:

05/12/2009 09:52

County:

Geoff Klein ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency: **Billing Code:** 

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009 14:37

Received By:

E McCrary

**Field Determinations** 

pH:

8.17

pH Units

Chlorine, residual:

Conductivity:

49

uMHO

Temperature:

16.85 Dissolved Oxygen: 9.88

mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	05/14/2009				S Ufegbu	5/14/2009

TEST: ICP	ME.	METHOD: EPA 200.7				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	190	μg/L	2.9	10	A Wilson	5/12/2009

TEST: ICP-MS	WE.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	97	μg/L	6.4	10	A Wilson	5/22/2009
Antimony	U	μg/L	0.33	1	A Wilson	5/22/2009
Arsenic	U	μg/L	0.93	5	A Wilson	5/22/2009
Barium	23	μg/L	2.5	5	A Wilson	5/22/2009
Beryllium	U	μg/L	0.11	1	A Wilson	5/22/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/22/2009
Chromium	U	μg/L	2.0	5	A Wilson	5/22/2009
Cobalt	0.23J	μg/L	0.04	1	A Wilson	5/22/2009
Copper	1.8	μg/L	0.38	1	A Wilson	5/22/2009
Lead	0.20J	μg/L	0.10	1	A Wilson	5/22/2009
Manganese	28	μg/L	0.42	1	A Wilson	5/22/2009
Nickel	0.91J	μg/L	0.25	1	A Wilson	5/22/2009
Selenium	U	μg/L	1.3	5	A Wilson	5/22/2009
Silver	. U	μg/L	0.03	0.25	A Wilson	5/22/2009
Thallium	0.14J	μg/L	0.03	1	A Wilson	5/22/2009
Vanadium	4.0J	μg/L	3.4	5	A Wilson	5/22/2009
Zinc	3.0J	µg/L	1.9	5	A Wilson	5/22/2009

K00002366001

**Project Name:** 

TVA-Ash Spill

Sample Description:

Emory River mile 12.1

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

Station No.:

EMORY012.1RO

Date/Time Collected:

05/12/2009 09:52

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

**Billing Code:** 

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received: 05/12/2009

14:37

Received By:

E McCrary

Field Determinations

pH:

8.17

pH Units

Chlorine, residual:

Conductivity:

49

uMHO

Temperature:

16.85 Dissolved Oxygen: 9.88

mg/L

Other:

Flow:

**CFS** 

TEST: Mercury	ME	ΓHOD: EPA 24	5.1			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	0.05J	μg/L	0.029	0.2	A Bass	5/20/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit MQL - Method Quantitation Limit

K00002366002

**Project Name:** 

TVA-Ash Spill

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

Station No.:

EMORY002.1RO

**Date/Time Collected:** Sampler's Name:

05/12/2009 10:50

County:

Geoff Klein

Sample Matrix:

ROANE - 73 Water

EFO: Sampling Agency: Knoxville

**Billing Code:** 

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009 14:37

Received By:

E McCrary

**Field Determinations** 

pH:

7.41

pH Units

Chlorine, residual:

Conductivity:

52

uMHO

17.60 Temperature: Dissolved Oxygen: 9.45

Other:

Flow:

CFS

mg/L

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	05/14/2009				S Ufegbu	5/14/2009

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	310	μg/L	2.9	10	A Wilson	5/26/2009

TEST: ICP-MS	ME.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	200	μg/L	64.0	100	A Wilson	5/22/2009
Antimony	0.64J	μg/L	0.33	1	A Wilson	5/22/2009
Arsenic	1.8J	μg/L	0.93	5	A Wilson	5/22/2009
Barium	29	μg/L	2.5	5	A Wilson	5/22/2009
Beryllium	U	μg/L	0.11	1	A Wilson	5/22/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/22/2009
Chromium	U	μg/L	2.0	5	A Wilson	5/22/2009
Cobalt	0.37J	μg/L	0.04	1	A Wilson	5/22/2009
Copper	0.63J	μg/L	0.38	1	A Wilson	5/22/2009
Lead	0.38J	μg/L	0.10	1	A Wilson	5/22/2009
Manganese	64	μg/L	0.42	1	A Wilson	5/22/2009
Nickel	1.2	μg/L	0.25	1	A Wilson	5/22/2009
Selenium	U	µg/L	1.3	5	A Wilson	5/22/2009
Silver	0.046J	μg/L	0.03	0.25	A Wilson	5/22/2009
Thallium	0.17J	μg/L	0.03	1	A Wilson	5/22/2009
Vanadium	7.0	μg/L	3.4	5	A Wilson	5/22/2009
Zinc	2.4J	μg/L	1.9	5	A Wilson	5/22/2009

K00002366002

**Project Name:** 

TVA-Ash Spill

Sample Description:

Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

**Station No.:** 

EMORY002.1RO 10:50

**Date/Time Collected:** Sampler's Name:

05/12/2009 Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency:

TDEC-WPC

**Billing Code:** Send Report To: 327.34-20

Agency Invoiced:

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009

14:37

Received By:

E McCrary

**Field Determinations** 

pH:

7.41

pH Units

Chlorine, residual:

Conductivity:

52

uMHO

Temperature:

17.60 Dissolved Oxygen: 9.45

mg/L

Other:

Flow:

**CFS** 

TEST: Mercury	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	5/20/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002366003

**Project Name:** 

TVA-Ash Spill

Sample Description:

Field Blank-Emory River mile 2.1

Sampler Project Name: TVA Ash Spill

Project Site No.:

2FB

Station No.:

EMORY002.1RO

Date/Time Collected: Sampler's Name:

05/12/2009 10:50

Geoff Klein

County: Sample Matrix: ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009 14:37

Received By:

E McCrary

TEST: Digestion Metals	MET	HOD: EPA 20	0.2			•
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	05/14/2009				S Ufegbu	5/14/2009

**Field Determinations** 

Chlorine, residual:

Dissolved Oxygen:

**CFS** 

Conductivity:

Temperature:

:Hq

Other:

Flow:

TEST: ICP	ST: ICP METHOD: EPA 200.7					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	U	μg/L	2.9	10	A Wilson	5/12/2009

TEST: ICP-MS	MET	THOD: EPA 200	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	U	μg/L	6.4	10	A Wilson	5/12/2009
Antimony	U	μg/L	0.33	1	A Wilson	5/12/2009
Arsenic	U	μg/L	0.93	5	A Wilson	5/12/2009
Barium	U	μg/L	2.5	5	A Wilson	5/12/2009
Beryllium	U	μg/L	0.11	1	A Wilson	5/12/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/12/2009
Chromium	U	μg/L	2.0	5	A Wilson	5/12/2009
Cobalt	U	μg/L	0.04	1	A Wilson	5/12/2009
Copper	U	μg/L	0.38	1	A Wilson	5/12/2009
Lead	U	μg/L	0.10	1	A Wilson	5/12/2009
Manganese	0.71J	μg/L	0.42	1	A Wilson	5/12/2009
Nickel	U	μg/L	0.25	1	A Wilson	5/12/2009
Selenium	U	μg/L	1.3	5	A Wilson	5/12/2009
Silver	U	μg/L	0.03	0.25	A Wilson	5/12/2009
Thallium	0.033J	μg/L	0.03	1	A Wilson	5/12/2009
Vanadium	U	μg/L	3.4	5	A Wilson	5/12/2009
Zinc	U	μg/L	1.9	5	A Wilson	5/12/2009

K00002366003

**Project Name:** 

TVA-Ash Spill

Sample Description:

Field Blank-Emory River mile 2.1

10:50

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

2FB

Station No.:

Date/Time Collected:

EMORY002.1RO

Sampler's Name:

05/12/2009 Geoff Klein

County:

Sample Matrix:

ROANE - 73 Water

EFO: **Sampling Agency:**  Knoxville

**Billing Code:** 

TDEC-WPC 327.34-20 TDEC-WPC

Send Report To: Agency Invoiced:

TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009

14:37

Received By:

TEST: Mercury

E McCrary

METHOD:	FPA 245.1
WIL 1110D.	LI A 270.1

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.029	0.2	A Bass	5/20/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

**MQL** - Method Quantitation Limit

U - Undetected

**Field Determinations** 

:Hq

Chlorine, residual: Conductivity:

Temperature:

**Dissolved Oxygen:** 

Other:

Flow:

K00002366004

**Project Name:** 

TVA-Ash Spill

Sample Description:

Emory River mile 2.1-Duplicate

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

2FD

Station No.:

EMORY002.1RO

Date/Time Collected:

05/12/2009 10:50

Sampler's Name: County:

Geoff Klein ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville

Billing Code: Send Report To: TDEC-WPC 327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009

14:37

Received By:

E McCrary

**Field Determinations** 

Dissolved Oxygen: 9.45

pH:

7.41

pH Units

Chlorine, residual:

Conductivity: Temperature: 52

17.60

uMHO mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY: DA					DATE
Digestion Metals	05/14/2009				S Ufegbu	5/14/2009

TEST: ICP	METHOD: EPA 200.7					
ANALYTE	RESULT UNITS MDL MQL ANALYZED BY: DATE					
Iron	380	μg/L	2.9	10	A Wilson	5/26/2009

TEST: ICP-MS	ME	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	530	μg/L	64.0	100	A Wilson	5/12/2009
Antimony	U	μg/L	0.33	1	A Wilson	5/12/2009
Arsenic	U	μg/L	0.93	5	A Wilson	5/12/2009
Barium	31	μg/L	2.5	5	A Wilson	5/12/2009
Beryllium	U	μg/L	0.11	1	A Wilson	5/12/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/12/2009
Chromium	U	μg/L	2.0	5	A Wilson	5/12/2009
Cobalt	0.37J	μg/L	0.04	1	A Wilson	5/12/2009
Copper	1.0	μg/L	0.38	1	A Wilson	5/12/2009
Lead	0.46J	μg/L	0.10	1	A Wilson	5/12/2009
Manganese	63	μg/L	0.42	1	A Wilson	5/12/2009
Nickel	1.3	μg/L	0.25	1	A Wilson	5/12/2009
Selenium	U	μg/L	1.3	-5	A Wilson	5/12/2009
Silver	U .	μg/L	0.03	0.25	A Wilson	5/12/2009
Thallium	0.040J	μg/L	0.03	1	A Wilson	5/12/2009
Vanadium	U	μg/L	3.4	5	A Wilson	5/12/2009
Zinc	3.1J	μg/L	1.9	5	A Wilson	5/12/2009

K00002366004

**Project Name:** 

TVA-Ash Spill

Sample Description:

Emory River mile 2.1-Duplicate

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

2FD

Station No.:

EMORY002.1RO

Date/Time Collected:

05/12/2009 10:50

Sampler's Name:

Geoff Klein

County:

ROANE - 73

**Sample Matrix:** 

EFO:

Water

Sampling Agency:

Knoxville

**Billing Code:** Send Report To: TDEC-WPC 327.34-20

Agency Invoiced:

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009

14:37

Received By:

**TEST: Mercury ANALYTE** 

Mercury

E McCrary

ME.	THOD: EPA 24	5.1			
RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
U	μg/L	0.029	0.2	A Bass	5/20/2009

Field Determinations

Dissolved Oxygen: 9.45

Chlorine, residual:

Conductivity:

Temperature:

7.41

52

17.60

pH Units

**uMHO** 

mg/L

CFS

pH:

Other:

Flow:

J - Estimated value between MDL and MQL

**MDL - Method Detection Limit** 

MQL - Method Quantitation Limit

K00002366005

**Project Name:** 

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

14:37

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

2B

Station No.:

EMORY001.9RO

Date/Time Collected: Sampler's Name:

05/12/2009 11:03

County:

Geoff Klein ROANE - 73

Sample Matrix: EFO:

Water Knoxville

Sampling Agency: **Billing Code:** 

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received: 05/12/2009

Received By:

E McCrary

**Field Determinations** 

pH:

7.15

pH Units

Chlorine, residual:

Conductivity:

50

uMHO

Temperature:

17.15 **Dissolved Oxygen: 9.52** 

mg/L

Other:

Flow: CFS

TEST: Digestion Metals	MET	HOD: EPA 20	0.2			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	05/14/2009				S Ufegbu	5/14/2009

TEST: ICP	METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	350	μg/L	2.9	10	A Wilson	5/26/2009	

TEST: ICP-MS	ME.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	270	μg/L	64.0	100	A Wilson	5/12/2009
Antimony	U	μg/L	0.33	1	A Wilson	5/12/2009
Arsenic	U	μg/L	0.93	5	A Wilson	5/12/2009
Barium	27	μg/L	2.5	5	A Wilson	5/12/2009
Beryllium	U	μg/L	0.11	1	A Wilson	5/12/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/12/2009
Chromium	U	μg/L	2.0	5	A Wilson	5/12/2009
Cobalt	0.28J	μg/L	0.04	1	A Wilson	5/12/2009
Copper	2.5	μg/L	0.38	1	A Wilson	5/12/2009
Lead	0.41J	μg/L	0.10	1	A Wilson	5/12/2009
Manganese	39	μg/L	0.42	1	A Wilson	5/12/2009
Nickel	1.1	μg/L	0.25	1	A Wilson	5/12/2009
Selenium	U	μg/L	1.3	5	A Wilson	5/12/2009
Silver	U	μg/L	0.03	0.25	A Wilson	5/12/2009
Thallium	U	μg/L	0.03	1	A Wilson	5/12/2009
Vanadium	U	μg/L	3.4	5	A Wilson	5/12/2009
Zinc	4.0J	μg/L	1.9	5	A Wilson	5/12/2009

K00002366005

**Project Name:** 

TVA-Ash Spill

Sample Description:

Emory River mile 1.9 at underwater weir

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

2B

Station No.:

EMORY001.9RO

**Date/Time Collected:** 

05/12/2009 11:03

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville

**Billing Code:** 

TDEC-WPC

Send Report To:

327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009

14:37

Received By:

TEST: Mercury **ANALYTE** Mercury

E McCrary

METHOD: EPA 245.1					
RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
0.05J	μg/L	0.029	0.2	A Bass	5/20/2009

**Field Determinations** 

**Dissolved Oxygen: 9.52** 

Chlorine, residual:

Conductivity:

Temperature:

pH:

Other:

Flow:

7.15

50

17.15

pH Units

**uMHO** 

mg/L

CFS

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002366006

**Project Name:** 

TVA-Ash Spill

Sample Description: Sampler Project Name: TVA Ash Spill

Emory River mile 1.7

**Project Site No.:** 

Station No.: EMORY001.7RO Date/Time Collected:

Sampler's Name:

05/12/2009 11:15 Geoff Klein

County: Sample Matrix: ROANE - 73

EFO: Sampling Agency: Water Knoxville

**Billing Code:** Send Report To: Agency Invoiced: TDEC-WPC 327.34-20 TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009 14:37

Received By:

E McCrary

**Field Determinations** 

pH: 7.28

Chlorine, residual:

52 Conductivity: Temperature:

17.11

pH Units

uMHO

Dissolved Oxygen: 9.39 mg/L

Other:

**CFS** Flow:

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	05/14/2009				S Ufegbu	5/14/2009	

TEST: ICP	METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	420	μg/L	2.9	10	A Wilson	5/26/2009	

TEST: ICP-MS	ME.	ΓHOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	460	μg/L	64.0	100	A Wilson	5/22/2009
Antimony	U	μg/L	0.33	1	A Wilson	5/22/2009
Arsenic	Ü	μg/L	0.93	5	A Wilson	5/22/2009
Barium	33	μg/L	2.5	5	A Wilson	5/22/2009
Beryllium	U	μg/L	0.11	1	A Wilson	5/22/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/22/2009
Chromium	U	μg/L	2.0	5	A Wilson	5/22/2009
Cobalt	0.46J	μg/L	0.04	1	A Wilson	5/22/2009
Copper	3.0	μg/L	0.38	1	A Wilson	5/22/2009
Lead	0.78J	μg/L	0.10	1	A Wilson	5/22/2009
Manganese	47	μg/L	0.42	1	A Wilson	5/22/2009
Nickel	1.5	μg/L	0.25	1	A Wilson	5/22/2009
Selenium	U ,	μg/L	1.3	5	A Wilson	5/22/2009
Silver	U	μg/L	0.03	0.25	A Wilson	5/22/2009
Thallium	0.052J	μg/L	0.03	1	A Wilson	5/22/2009
Vanadium	U	μg/L	3.4	5	A Wilson	5/22/2009
Zinc	3.9J	μg/L	1.9	5	A Wilson	5/22/2009

K00002366006

**Project Name:** 

TVA-Ash Spill

Sample Description:

Emory River mile 1.7

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

3

Station No.:

EMORY001.7RO

**Date/Time Collected:** 

05/12/2009 11:15

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

**Sampling Agency:** 

Knoxville

**Billing Code:** 

**TDEC-WPC** 327.34-20

Send Report To: Agency Invoiced: **TDEC-WPC** TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009

14:37

Received By:

**TEST: Mercury** 

E McCrary

METHOD: EPA 245.1

**ANALYTE RESULT** UNITS MDL MQL **ANALYZED BY:** DATE 0.06J 0.029 Mercury μg/L 0.2 A Bass 5/20/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

U - Undetected

**Field Determinations** 

pH: 7.28

Chlorine, residual:

pH Units

Conductivity:

52

**uMHO** 

Temperature: **Dissolved Oxygen: 9.39** 

17.11

mg/L

Other:

Flow:

K00002366007

**Project Name:** 

TVA-Ash Spill Emory River mile 0.1

Sample Description: Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

**Station No.:** 

EMORY000.1RO

**Date/Time Collected:** Sampler's Name:

05/12/2009 11:23

County:

Geoff Klein ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency: **Billing Code:** 

Knoxville TDEC-WPC 327.34-20

Send Report To: Agency Invoiced: TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009

14:37

Received By:

E McCrary

**Field Determinations** 

:Hq

7.13

pH Units

uMHO

Chlorine, residual:

Conductivity:

51

Temperature: Dissolved Oxygen: 9.23

17.60

mg/L

Other:

Flow:

TEST: Digestion Metals	MET	HOD: EPA 20	0.2			·
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	05/14/2009	,			S Ufegbu	5/14/2009

TEST: ICP	MET	THOD: EPA 20	0.7	,		
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	770	μg/L	2.9	10	A Wilson	5/26/2009

TEST: ICP-MS	ME <sup>-</sup>	THOD: EPA 200	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	870	μg/L	64.0	100	A Wilson	5/22/2009
Antimony	0.86J	μg/L	0.33	1	A Wilson	5/22/2009
Arsenic	1.7J	μg/L	0.93	5	A Wilson	5/22/2009
Barium	43	μg/L	2.5	5	A Wilson	5/22/2009
Beryllium	0.16J	μg/L	0.11	1	A Wilson	5/22/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/22/2009
Chromium	U	μg/L	2.0	5	A Wilson	5/22/2009
Cobalt	0.84J	μg/L	0.04	1	A Wilson	5/22/2009
Copper	3.1	μg/L	0.38	1	A Wilson	5/22/2009
Lead	1.3	μg/L	0.10	1	A Wilson	5/22/2009
Manganese	71	μg/L	0.42	1	A Wilson	5/22/2009
Nickel	2.2	μg/L	0.25	1	A Wilson	5/23/2009
Selenium	U	μg/L	1.3	5	A Wilson	5/22/2009
Silver	0.046J	μg/L	0.03	0.25	A Wilson	5/22/2009
Thallium	0.18J	μg/L	0.03	1	A Wilson	5/22/2009
Vanadium	4.6J	μg/L	3.4	5	A Wilson	5/22/2009
Zinc	5.3	µg/L	1.9	5	A Wilson	5/22/2009

K00002366007

**Project Name:** 

TVA-Ash Spill

Sample Description:

Emory River mile 0.1

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

Station No.:

EMORY000.1RO

Date/Time Collected:

05/12/2009 11:23

Sampler's Name:

Geoff Klein

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

**Billing Code:** 

TDEC-WPC

Send Report To: Agency Invoiced:

Date/Time Received:

327.34-20 TDEC-WPC TDEC-WPC

**Priority Date:** 

05/12/2009 14:37

Received By:

E McCrary

**Field Determinations** 

pH:

7.13

pH Units

Chlorine, residual:

Conductivity:

51

uMHO

Temperature:

17.60

Dissolved Oxygen: 9.23 mg/L

Other:

Flow:

**CFS** 

TEST: Mercury	ME	THOD: EPA 24	5.1			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	0.07J	μg/L	0.029	0.2	A Bass	5/20/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002366008

**Project Name:** 

TVA-Ash Spill

Sample Description:

Clinch River mile 2.3

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

Station No.:

CLINC002.3RO

Date/Time Collected:

05/12/2009 11:34

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

**Billing Code:** Send Report To: TDEC-WPC 327.34-20 **TDEC-WPC** 

Agency Invoiced:

TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009

14:37

Received By:

E McCrary

**Field Determinations** 

pH:

7.70

pH Units

Chlorine, residual:

Conductivity:

200 17.20 uMHO

Temperature: Dissolved Oxygen: 9.76

mg/L

Other:

Flow:

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	05/14/2009				S Ufegbu	5/14/2009

TEST: ICP	METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Iron	600	μg/L	2.9	10	A Wilson	5/26/2009	

TEST: ICP-MS	MET.	THOD: EPA 20	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	680	μg/L	64.0	100	A Wilson	5/22/2009
Antimony	U	μg/L	0.33	1	A Wilson	5/22/2009
Arsenic	1.2J	μg/L	0.93	5	A Wilson	5/22/2009
Barium	38	μg/L	2.5	5	A Wilson	5/22/2009
Beryllium	U	μg/L	0.11	, 1	A Wilson	5/22/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/22/2009
Chromium	U	μg/L	2.0	5	A Wilson	5/22/2009
Cobalt	0.52J	μg/L	0.04	1	A Wilson	5/22/2009
Copper	2.9	μg/L	0.38	. 1	A Wilson	5/22/2009
Lead	0.86J	μg/L	0.10	1	A Wilson	5/22/2009
Manganese	58	μg/L	0.42	1	A Wilson	5/22/2009
Nickel	1.7	μg/L	0.25	1	A Wilson	5/23/2009
Selenium	U	μg/L	1.3	5	A Wilson	5/22/2009
Silver	U	μg/L	0.03	0.25	A Wilson	5/22/2009
Thallium	0.057J	μg/L	0.03	1	A Wilson	5/22/2009
Vanadium	U	µg/L	3.4	5	A Wilson	5/22/2009
Zinc	3.7J	μg/L	1.9	5	A Wilson	5/22/2009

K00002366008

**Project Name:** 

TVA-Ash Spill

**Sample Description:** 

Clinch River mile 2.3

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

**Station No.:** 

CLINC002.3RO

Date/Time Collected:

05/12/2009 11:34

Sampler's Name:

Geoff Klein

County: Sample Matrix: ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville

**Billing Code:** 

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009

14:37

Received By:

TEST: Mercury

E McCrary

METHOD:	EPA	245.1	

**Field Determinations** 

Dissolved Oxygen: 9.76

Chlorine, residual:

Conductivity:

Temperature:

7.70

200

17.20

pH Units

uMHO

mg/L

CFS

pH:

Other:

Flow:

ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	0.06J	μg/L	0.029	0.2	A Bass	5/20/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002366009

Project Name:

TVA-Ash Spill

Sample Description:

Clinch River TVA Discharge Point

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

5A

Station No.:

KingAshOutF2

Date/Time Collected:

05/12/2009 11:42

Sampler's Name: County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency: **Billing Code:** 

TDEC-WPC 327.34-20

Send Report To: Agency Invoiced:

TDEC-WPC TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009 14:37

Received By:

E McCrary

TEST: Digestion Metals	gestion Metals METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	05/14/2009				S Ufegbu	5/14/2009	

**Field Determinations** 

**Dissolved Oxygen: 9.04** 

Chlorine, residual:

Conductivity:

Temperature:

pH:

Other: Flow:

7.43

62

19.18

pH Units

uMHO

mg/L

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	610	μg/L	2.9	10	A Wilson	5/26/2009

TEST: ICP-MS	ME					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	1100	μg/L	64.0	100	A Wilson	5/22/2009
Antimony	U	μg/L	0.33	1	A Wilson	5/22/2009
Arsenic	2.4J	μg/L	0.93	5	A Wilson	5/22/2009
Barium	45	μg/L	2.5	5	A Wilson	5/22/2009
Beryllium	0.16J	μg/L	0.11	1	A Wilson	5/22/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/22/2009
Chromium	U	μg/L	2.0	5	A Wilson	5/22/2009
Cobalt	0.75J	μg/L	0.04	1	A Wilson	5/22/2009
Copper	5.5	μg/L	0.38	1	A Wilson	5/22/2009
Lead	1.4	μg/L	0.10	1	A Wilson	5/22/2009
Manganese	47	μg/L	0.42	1	A Wilson	5/22/2009
Nickel	2.0	μg/L	0.25	1	A Wilson	2/23/2009
Selenium	U	μg/L	1.3	5	A Wilson	5/22/2009
Silver	U	μg/L	0.03	0.25	A Wilson	5/22/2009
Thallium	· 0.095J	μg/L	0.03	1	A Wilson	5/22/2009
Vanadium	4.5J	μg/L	3.4	5	A Wilson	5/22/2009
Zinc	5.7	μg/L	1.9	5	A Wilson	5/22/2009

K00002366009

**Project Name:** 

TVA-Ash Spill

Sample Description:

Clinch River TVA Discharge Point

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

5A

Station No.:

KingAshOutF2

Date/Time Collected:

05/12/2009 11:42

Sampler's Name: County:

Geoff Klein

Sample Matrix:

**ROANE - 73** 

EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-WPC

Send Report To:

327.34-20 TDEC-WPC

Agency Invoiced: **Priority Date:** 

TDEC-WPC

Date/Time Received:

05/12/2009

14:37

Received By:

E McCrary

Dissolved	Oxygen:	9.04	mg/L
Other:			
			050

7.43

62

19.18

pH Units

uMHO

:Hq

**Field Determinations** 

Chlorine, residual:

Conductivity:

Temperature:

Flow: **CFS** 

TEST: Mercury	ME <sup>*</sup>					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	0.07J	μg/L	0.029	0.2	A Bass	5/20/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

K00002366010

**Project Name:** 

TVA-Ash Spill

Sample Description:

Clinch River mile 4.5 near Sugar Grove Valley R Chlorine, residual:

**Field Determinations** 

Dissolved Oxygen: 10.19

Conductivity:

Temperature:

7.86

244

15.78

pH Units

uMHO

mg/L

**CFS** 

pH:

Other:

Flow:

Sampler Project Name: TVA Ash Spill

**Project Site No.:** 

**Station No.:** 

CLINC004.5RO

**Date/Time Collected:** 

05/12/2009 11:53

Sampler's Name: County:

Geoff Klein ROANE - 73

Sample Matrix:

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

**Billing Code:** Send Report To: 327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009

14:37

Received By:

E McCrary

TEST: Digestion Metals	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	05/14/2009				S Ufeabu	5/14/2009

TEST: ICP METHOD: EPA 200.7						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Iron	700	μg/L	2.9	10	A Wilson	5/26/2009

TEST: ICP-MS	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Aluminum	570	μg/L	64.0	100	A Wilson	5/22/2009
Antimony	U	μg/L	0.33	1	A Wilson	5/22/2009
Arsenic	U	μg/L	0.93	5	A Wilson	5/22/2009
Barium	41	μg/L	2.5	. 5	A Wilson	5/22/2009
Beryllium	U	μg/L	0.11	1	A Wilson	5/22/2009
Cadmium	U	μg/L	0.41	1	A Wilson	5/22/2009
Chromium	U	μg/L	2.0	5	A Wilson	5/22/2009
Cobalt	0.61J	μg/L	0.04	1	A Wilson	5/22/2009
Copper	2.7	μg/L	0.38	1	A Wilson	5/22/2009
Lead	1.2	μg/L	0.10	1	A Wilson	5/22/2009
Manganese	100	μg/L	0.42	1	A Wilson	5/22/2009
Nickel	1.8	μg/L	0.25	1	A Wilson	5/23/2009
Selenium	Ų	μg/L	1,3	5	A Wilson	5/22/2009
Silver	U	μg/L	0.03	0.25	A Wilson	5/22/2009
Thallium	0.045J	μg/L	0.03	1	A Wilson	5/22/2009
Vanadium	U	μg/L	3.4	5	A Wilson	5/22/2009
Zinc	4.5J	μg/L.	1.9	5	A Wilson	5/22/2009

K00002366010

**Project Name:** 

TVA-Ash Spill

Sample Description: Sampler Project Name: TVA Ash Spill

Clinch River mile 4.5 near Sugar Grove Valley R Chlorine, residual:

**Project Site No.:** 

**Station No.:** 

**Date/Time Collected:** 

CLINC004.5RO

Sampler's Name:

05/12/2009 11:53

County:

Geoff Klein

Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-WPC

**Billing Code:** Send Report To: 327.34-20 TDEC-WPC

Agency Invoiced:

TDEC-WPC

**Priority Date:** 

Date/Time Received:

05/12/2009

14:37

Received By:

E McCrary

TEST: Mercury METHOD: EPA 245.1						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	0.09J	μg/L	0.029	0.2	A Bass	5/20/2009

**Field Determinations** 

Dissolved Oxygen: 10.19

Conductivity:

Temperature:

7.86

244

15.78

pH Units

uMHO

mg/L

**CFS** 

pH:

Other:

Flow:

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit